Promotion of Active and Alternative Transportation on College Campuses:

Problem Definition & Research Summary

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Abstract

As you already know, our group is trying to propose our ideas to solve UTC's lack of parking. Last semester, we had a totally different direction which related more to marketing than finding a solution that was worthwhile. Since we thought marketing was a problem worth pursuing, we wanted to know how many students know of and currently use both types of transportation. This being said, we created surveys to hand out to people on campus. We had our data collected from the surveys, but we were not sure what we had to do. At the beginning of this semester, we made the decision to change the focus of our research. We realized that marketing is only a piece of a much bigger problem. In retrospect, marketing seemed to be a futile idea for us to work for. We have complained and heard others complain about UTC's parking, so we deciding focus on resolving this issue. Through various in-class activities, we decided that staggering class times, and implementing commuter parking lots would be most advantageous.

Original Problem

Last semester, we may have been misguided in our topic for active and alternative transportation. We believed that our topic had to be directly related to active and alternative transportation. When we thought of issues relating to active and alternative transportation, we thought there was a lack of use for both. We thought this is a larger scale, yet more of an issue we could address. Before we took an extensive measure, we researched other schools to see what they did regarding active and alternative transportation.

Investigation

Using similar surveys and analysis similar to the studies we found, we looked to define the ways the University of Tennessee at Chattanooga (UTC) promotes active and alternative transportation on campus. To do this, we first researched general transportation trends in the US, especially among college students. We also developed a good understanding of our region, the demographics of UTC, and transportation policies at other schools and universities.

According to the American Public Transportation Association (APTA), "public transportation use in the United States rose to 10.7 billion trips, and from 1995-2013, public transportation use has increased over 37%." Factors that attributed to this massive increase include the gasoline boom, which raised gas prices to $3.00 per gallon for the first time in 2005. Another trend that could attributed to the increased usage of public transport is the "Millennials' desire for travel option and the Baby Boomers' return to urban areas, have established consistent travel behaviors" (APTA).

National trends are heading towards less car use and more active and alternative transportation. Many colleges and universities are taking heed and creating policies and programs that encourage active and alternative transportation use on their campuses and in the surrounding cities. Colleges across the nation are experiencing "growing enrollment and expanding physical campus facilities which make it

difficult to manage transportation of students to and around college campuses. Since parking is such a huge issue everywhere, schools are increasingly focusing on providing and incentivizing active and alternative transportation options including According to BikeTexas.org, many Texas colleges and universities are promoting walking and cycling because active transportation solves parking problems, allows students to make smart economic choices; addresses sustainability and air quality concerns; and encourages active, safe, and healthy lifestyles.

UTC offers some programs to incentivize and encourage active and alternative transportation use on campus. At UTC, students can ride the bus system in Chattanooga with no cost, just by showing their MocsCard. UTC Outdoors allows students to rent bikes at a minimal cost of $60 a semester. Bike rental includes rental of the bike itself, a helmet, locks, and lights as well as any maintenance the bike may need while it is checked out. There are also Bike Chattanooga bike share docking stations located throughout campus. Students can rent bikes an hour at a time and travel to any biking station in the city.

In order to better understand UTC and its promotion or access to Active and Alternative transportation, it must be compared to another University with similar enrollment. Researcher Jasmine Snell attended Howard University in Washington D.C. to interview Maybelle Bennet, the Director of Community Association at Howard University. Washington D.C. is different from Chattanooga in that D.C. cannot tax the commuters who work within boundaries because the District of Columbia does not have “state status.” This means high property taxes for people who live within the D.C. boundaries and high parking fees throughout the district. Howard’s enrollment in 2014 was 10,265 students total with about 2,095 parking spaces. The current private lots at HU cost around $200/month and street parking costs $2.00 per hour Monday-Friday. The high rates of parking mean that 41% of Howard students, faculty, and staff use active and alternative transportation. There is currently no college discount for metro lines.

Compared to Howard, UTC has around12,000 students and around 5,000 parking spots. We conducted our own research and found that there are 5 bike stations on UTC’s campus. We counted an average of around 112 bikes on campus during peak hours of the day. We took a survey of a sample of 55 students inquiring transportation habits, classification, and residence. The following tables show results from the surveys.

When asked: Do you live on campus?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	32.7	32.7	32.7
	No	37	67.3	67.3	100.0
	Total	55	100.0	100.0	

When asked: What is your classification?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	10	18.2	18.2	18.2
	Sophomore	10	18.2	18.2	36.4
	Junior	13	23.6	23.6	60.0
	Senior	16	29.1	29.1	89.1
	Graduate Student	6	10.9	10.9	100.0
	Total	55	100.0	100.0	

When asked: What is your most frequent form of transportation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Motorized Vehicle	39	70.9	70.9	70.9
	Public Transit	3	5.5	5.5	76.4

Active(walking,biking)	13	23.6	23.6	100.0
Total	55	100.0	100.0	

Cross tabulations of this information show that 67% of students surveyed live off campus, out of the students who live off 81% say that motorized vehicles are their most frequent form of transportation.

This information shows us that students who live off campus are not using the transit as much as they could, due to the fact that it is offered for free. We also saw that of students who live on campus, less than 1% use public transit. A good thing to note, is that 44% of students who live on campus use active transportation, which we classified as walking or biking.

Limitations to our survey include the fact that we got such a small sample. With more respondents, we would have been able to get a more adequate representation of the student population. However, our sample was diverse with an adequate representation of the student population by classification.

Change of Direction

For Innovation Lab II, our group redefined its problem to address UTC's parking problem. This change in topic was due to the ill reactions we received during our presentation last December. Also, our defined problem bared a striking resemblance to the defined problem that one red barracuda chose to solve as well. To summarize, our previous defined problem related to the lack of active and alternative transportation being used on a campus level. The fact of the matter is, people do not know enough about the subject, because it is not thoroughly marketed to students. In addition, the results of our surveys supported our hypothesis that the lack of use of active and alternative transportation is due to minimal knowledge about the topic. Our group's ideas and defined problem were not flawed; ultimately the failure of our previous topic was due to our inability to adequately communicate our ideas and findings.

We are not necessarily turning our backs on our previous defined problem; instead we are simply narrowing our problem. Poor marketing of active and alternative transportation to individual car use adds to the real issue, which is an insufficient amount of parking spaces on UTC's campus. The lack of use of active and alternative transportation is only an issue because there is insufficient parking space, but if there were ample parking, active and alternative transportation would not necessarily be a topic of issue. Moreover, if our group found a way to start a marketing campaign for active and alternative transportation on the campus level, there would not be any guarantee that we would see a decrease of campus car traffic and an increase in the use of alternate forms of transportation. Basically, we would most likely still have parking problems.

Our new redefined idea included two major solutions. Our first solution suggests

that staggering class times by twenty minutes throughout the day will lessen the amount of traffic through school. There is a better chance of finding parking during the twenty minute windows, because many people are leaving campus. On a normal day and under normal circumstances, it takes roughly twenty minutes to find parking. Usually the busy times are from nine in the morning to three in the afternoon. One of the only draw backs to this system would be that the last class of the day would be pushed back by at least an hour. Dr. Richard Brown personally felt this would be a very advantageous idea, but employees of the records office feel otherwise. For instance, Peter brought up the idea of staggered class times to Linda Orth during a meeting a few weeks ago. She claimed that it would not work and students would not want to take a later class. Immediately after this, she brought up the idea of night owl classes, which contradicts her previous opinion of the staggered class times. Our group believes staggering class times will do more good than harm. Furthermore, most students will not be in classes from eight in the morning until nine to nine-thirty at night. Also, it is not likely that a student will have a full day of classes every single day. If a student has class every day, it is likely that they will only be in class part of the day.

UTC would not be the only school to have used this system of staggering class times by twenty minutes, if they chose to use the system. Rutgers, a university in Virginia, uses this system on their campus. More specifically, their classes are 55 minutes long with 20 minutes in between, or 80 minutes long with 45 minutes in between. In the appendix section of this paper, there are two tables which show the start times and end times of the 55 minute classes and 80 minute classes. Both of the table were pulled directly form the Rutgers website. Furthermore, on the Rutgers website there is a section which explains their class schedule. Rutgers uses this system to aid in campus travel.

Our other idea was the possible implementation of commuter lots. If commuter lots were to be implemented, they would allow commuters a place to park without having to compete with on campus residents. With this system, on campus residents would have their own parking lots. Commuters would not be able to park in residential and vice versa. We believe a good start would be to have the parking garage beside the ARC be a commuter and visitor parking only, section. With our proposed system, the ratio of commuter lots to residential lots would be close to even. We believe it would be fair to have residential parking passes cost around 150 dollars per semester, while the commuter parking passes cost 200 dollars per academic school year.

In order to see if our plans will indeed work, survey will need to be distributed before and after the implementation. For the first part of our plan, we will make and distribute a survey to students, faculty, and staff one semester before our implementation phase. In this survey, we will be asking students and staff what they think about the current state of UTC's parking system. They will be able to

rate the ease of parking from highly satisfied, satisfied, somewhat satisfied, neither satisfied or dissatisfied, somewhat dissatisfied, dissatisfied, or highly dissatisfied. We will conduct the same survey one semester after our plan has been implemented to see if the opinions of the surveyors have changed. We will also monitor ticket rates for the year prior to our plan implementation and the year after it. This will give us an idea of how our plans have affected the campus and hopefully resolved the issue. Our last plan for evaluation is to count available parking spaces during peak times both before and after our interventions are implemented to see if available spaces have been changed by staggering classes. With all of these monitorial tactics, we will have a clear understanding of how (A) staggering classes and (B) designating commuter/non-commuter lots have or have not solved the University's parking dilemma.

References

https://scheduling.rutgers.edu/scheduling/class-scheduling

http://www.apta.com/Pages/default.aspx

http://www.utc.edu/auxiliary-services/parking/

https://www.utc.edu/campus-recreation/utc-outdoors/

Appendices:
Appendix A

80-minute periods

Period	College Avenue Downtown NB	Busch/Livingston	Cook/Douglass
1	8:10am - 9:30am	8:40am - 10:00am	9:15am - 10:35am
2	9:50am - 11:10am	10:20am - 11:40am	10:55am - 12:15pm
3	11:30am - 12:50pm	12:00pm - 1:20pm	12:35pm - 1:55pm
4	1:10pm - 2:30pm	1:40pm - 3:00pm	2:15pm - 3:35pm
5	2:50pm - 4:10pm	3:20pm - 4:40pm	3:55pm - 5:15pm
6	4:30pm - 5:50pm	5:00pm - 6:20pm	5:35pm - 6:55pm
7	6:10pm - 7:30pm	6:40pm - 8:00pm	7:15pm - 8:35pm
8	7:40pm - 9:00pm	8:10pm - 9:30pm	8:45pm - 10:05pm
9	9:10pm - 10:30pm	9:40pm - 11:00pm	

Appendix B

55-minute periods

Period	College Avenue Downtown NB	Busch/Livingston	Cook/Douglass
1	8:25am - 9:20am	8:55am - 9:50am	9:30am - 10:25am
2	10:05am - 11:00am	10:35am - 11:30am	11:10am - 12:05pm
3	11:45am - 12:40pm	12:15pm - 1:10pm	12:50pm - 1:45pm
4	1:25pm - 2:20pm	1:55pm - 2:50pm	2:30pm - 3:25pm
5	3:05pm - 4:00pm	3:35pm - 4:30pm	4:10pm - 5:05pm
6	4:45pm - 5:40pm	5:15pm - 6:10pm	5:50pm - 6:45pm
7	6:25pm - 7:20pm	6:55pm - 7:50pm	7:30pm - 8:25pm
8	7:55pm - 8:50pm	8:25pm - 9:20pm	8:45pm - 9:40pm
9	9:10pm - 10:05pm	9:40pm - 10:35pm	